



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/588,622

08/04/2006

Mark F. Sonnenschein

63344A

8246

109 7590 10/08/2010
The Dow Chemical Company
P.O. BOX 1967
Midland, MI 48641

EXAMINER

ZHAO, XIAO SI

ART UNIT

PAPER NUMBER

1714

MAIL DATE

DELIVERY MODE

10/08/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,622	Applicant(s) SONNENSCHN ET AL.	
	Examiner XIAO ZHAO	Art Unit 1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 June 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/11/2010</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6/11/2010 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. **Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnenschein et al. (US 2002/0033227) in view of Lassila et al. (US 2005/0176605).**

Per independent claims 1, 7, and 9:

Sonnenschein et al. teach a polymerizable adhesive composition ([0013]) that is a 2-part formulation ([0055]). The first part contains the complexes of the composition, and the other part contains the initiator ([0055]). Specifically, Sonnenschein et al. disclose an embodiment that utilizes an amine organoborane complex, a two-part adhesive with acrylic resin with an initiator ([0083]-[0085]). In the specific embodiment above, Sonnenschein et al. do not disclose that the complex is a trialkylborane-organonitrogen complex. However, the reference does disclose that the amine organoborane complex can be a trialkylborane-organonitrogen complex ([0011]). It would have been obvious to a skilled artisan to use said trialkylborane-organonitrogen complex as disclosed by the reference with a reasonable expectation of success. Furthermore, the reference discloses that water can be added as a solvent in order for the composition to be used as a coating.

Sonnenschein et al. do not disclose a neutral or basic surfactant is used with the composition.

Lassila et al. disclose that the ability to reduce surface tension is of great importance in adhesives and that surfactants are generally used to reduce surface tension ([0003]). Specifically, the surfactant can be polyethylene glycol or poly(ethylene glycol-co-propylene glycol) ([0071]). Since this surfactant is the same surfactant disclosed by the Applicants (see instant claim 4), it is also a neutral or basic surfactant.

It would have been obvious to a skilled artisan to add polyethylene glycol, as disclosed by Lassila et al., as a neutral or basic surfactant to the composition of

Art Unit: 1714

Sonnenschein et al. One would have been motivated to do so because Lassila et al. teach that lowering the surface tension (by adding surfactants) can provide better substrate wetting and also can reduce the problem of bubble generation or foaming during spray applications (see Lassila, [0003]).

Per claim 2, Sonnenschein et al. teach that the composition contains trialkylborane-organonitrogen complex ([0011]) and poly(methylmethacrylate) ([0085]).

Per claim 3, Sonnenschein et al. teach that the thixotropic agent is poly(methyl methacrylate) ([0085]).

Per claim 4, Lassila et al. disclose that the surfactant is polyethylene glycol (see above). It has already been established that it would have been obvious to use the surfactant of Lassila et al. with Sonnenschein et al. (see rejection for claim 1).

Per claim 5, Sonnenschein et al. teach that the second part of the formulation contains methylmethacrylate and acrylic acid (see claim 1).

Per claim 6, Sonnenschein et al. teach that the second part of the formulation contains methylmethacrylate and acrylic acid (see claim 1).

Per claim 8, pigments can be added to the composition ([0068]).

Per claims 10-11, Sonnenschein et al. disclose that the protected alkylborane complex is a trialkylborane-organonitrogen complex ([0011]).

Per claim 12, the composition is a cured adhesive ([0013]).

Per independent claim 13:

Claim 13 contains all the limitations of claim 1 and further includes contacting the formulation and applying the curing adhesive to a low surface energy substrate.

Sonnenschein et al. teach contacting the components of the adhesive composition and applying the adhesive to substrates ([0013]). The substrate is low surface energy substrate ([0014]).

Per claim 14, the curing and contacting are done concurrently ([0013]).

Per claim 15, the substrate is polypropylene ([0067]).

5. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sonnenschein et al. (US 2002/0033227) in view of Lassila et al. (US 2005/0176605) and in further view of Sonnenschein et al. (US 2004/0259990).

Sonnenschein('227)/Lassila teach all the limitations of claim 13 and that a low surface energy polypropylene substrate is used. Sonnenschein('227)/Lassila do not specify the tacticity of the polypropylene substrate.

Isotactic polypropylene is a low surface energy substrate. This is taught by Sonnenschein et al. ('990) wherein the reference teach that isotactic polypropylene is a low surface energy substrate (see abstract).

Art Unit: 1714

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an isotactic polypropylene as the low surface energy substrate taught by Sonnenschein('227)/Lassila. One would have been motivated to choose isotactic as the tacticity of polypropylene because the reference disclose that a low surface energy substrate needs to be used.

Response to Arguments

8. Applicant's arguments filed 6/11/2010 have been fully considered but they are not persuasive.

a. Applicants argue that Sonnenschein ('227) does not disclose, either literally or inherently, an embodiment or example that would anticipate the instant 2-part formulation. This argument is moot because the rejection of instant claims has been changed to a U.S.C. 103 rejection. Furthermore, Applicants' argument regarding picking and choosing composition from the reference has been addressed in the rejection above.

b. Applicants' arguments regarding the amended limitation (a neutral or basic surfactant) and the polyethylene glycol diacrylate relied in the previous rejection are also moot because of the new ground of rejection above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XIAO ZHAO whose telephone number is (571)270-

Art Unit: 1714

5343. The examiner can normally be reached on Monday to Friday 8:30 am EST to 5:00 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Kornakov can be reached on (571)272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Xiao S Zhao/
Examiner, Art Unit 1714

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit 1715